

FORM 1449\*

**INFORMATION DISCLOSURE STATEMENT  
IN AN APPLICATION**

(Use several sheets if necessary)



Docket Number

30431.5USO1

Application Number

09/620,691

Applicant

David A. Tirrell and Yi Tang

Filing Date

July 20, 2000

Group Art Unit

1643

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

## FOREIGN PATENT DOCUMENTS

DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
					YES NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

03	✓	Aizawa, Y. et al., "Stability of the Dimerization Domain Effects the Cooperative DNA Binding of Short Peptides", <i>Biochemistry</i> (1999), 38, 4008-4017. (Exhibit 1)
	✓	Arndt, K. et al., "GCN4 protein, a positive transcription factor in yeast, binds general control promoters at all 5' TGACTC 3' sequences", <i>Proc. Natl. Acad. Sci. USA</i> , (1986), 83, 8516-8520. (Exhibit 2)
	✓	Baldwin, E. et al., "Thermodynamic and Structural Compensation in "Size-switch" Core Repacking Variants of Bacteriophage T4 Lysozyme", <i>J. Mol. Biol.</i> (1996), 259: 542-559. (Exhibit 3)
	✓	Chao, H. et al., "Kinetic Study on the Formation of a de Novo Designed Heterodimeric Coiled-Coil: Use of Surface Plasmon Resonance to Monitor the Association and Dissociation of Polypeptide Chains", <i>Biochemistry</i> (1996), 35: 12175-12185. (Exhibit 4)
	✓	Chenault, H. K. et al., "Kinetic Resolution of Unsaturated and Rarely Occurring Amino Acids: Enantioselective Hydrolysis of N-Acyl Amino Acids Catalyzed by Acylase I", <i>J. Am. Chem. Soc.</i> (1989), 111, 6354-6364. (Exhibit 5)
	✓	Cornish, V. M. et al., "Probing Protein Structure and Function with an Expanded Genetic Code", <i>Angew. Chem. Int. Ed. Engl.</i> (1995), 34: 621-633. (Exhibit 6)
	✓	d'Avignon, D. A. et al., "Thermodynamic and kinetics of a folded-folded transition at Valine-9 of a GCN4-like leucine zipper", <i>Biophys. J.</i> (1999), 76: 2752-2759. (Exhibit 7)
	✓	Dahiyat, B.L. et al., "De Novo Protein Design: Fully Automated Sequence Selection" <i>Science</i> (1997), 278: 82-87. (Exhibit 8)
	✓	DeGrado, W. F. et al., "De Novo Design and Structural Characterization of Proteins and Metalloproteins", <i>Annu. Rev. Biochem.</i> (1999), 68: 779-819. (Exhibit 9)
	✓	Duwel, H. et al., "Incorporation of Trifluoromethionine into a Phage Lysozyme: Implication and a New Marker for Use in Protein 19F NMR", <i>Biochemistry</i> (1997), 36, 3404-3416. (Exhibit 10)
	✓	Ellenberger, T. E. et al., "The GCN4 Basic Region Leucine Zipper Binds DNA as a Dimer of Uninterrupted $\alpha$ Helices: Crystal Structure of the Protein-DNA Complex" <i>Cell</i> (1992), 71: 1223-1237. (Exhibit 11)
03	✓	Fersht, A. R. et al., "Principles of protein stability derived from protein engineering experiments", <i>Curr. Opin. Struct. Biol.</i> (1993), 3: 75-83. (Exhibit 12)

EXAMINER

David G. Glick

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FORM 1449\*

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**OTHER DOCUMENTS** (Including Author, Title, Date, Pertinent Pages, Etc.)

09	✓	Ghosh, A. et al. "Generalized Born Model Based on a Surface Integral Formulation" <i>J. Phys. Chem. B</i> , (1998) 102, 10983-10990. (Exhibit 13)
	✓	Giver, L. et al., "Directed evolution of a thermostable esterase", <i>Proc. Natl. Acad. Sci. USA</i> (1998), 95: 12809-12813. (Exhibit 14)
		Gonzales, L. et al., "Crystal structures of a single coiled-coil peptide in two oligomeric states reveal the basis for structural polymorphism", <i>Nat. Struct. Biol.</i> (1996), 3: 1002-1100. (Exhibit 15)
		Gough, C. A. et al., "Calculations of the relative free energies of aqueous solvation of several fluorocarbons: A test of the bond potential of mean force correction" <i>J. Chem. Phys.</i> (1993), 99: 9103-9110. (Exhibit 16)
		Handel, T. M. et al., "Metal Ion-Dependent Modulation of the Dynamics of a Designed Protein", <i>Science</i> , (1993), 261: 879-885. (Exhibit 17)
		Harbury, P. B. et al., "A Switch Between Two-, Three-, and Four- Stretched Coiled Coils in GCN4 Leucine Zipper Mutants", <i>Science</i> , (1993), 262, 1401-1407. (Exhibit 18)
		Harpaz, Y. et al., "Volume changes on protein folding", <i>Structure</i> (1994), 2: 641-649. (Exhibit 19)
		Hill, C. P. et al., "The structure of granulocyte-colony-stimulating factor and its relationship to other growth factors" <i>Proc. Natl. Acad. Sci. USA</i> (1993), 90, 5167-5171. (Exhibit 20)
		Hine, J. et al., "The Intrinsic Hydrophilic Character of Organic Compounds, Correlations in Terms of Structural Contributions", <i>J. Org. Chem.</i> (1975), 40: 292-297. (Exhibit 21)
		Hockings, S. C. et al., "Characterization of the ATF/CREB site and its complex with GCN4", <i>Proc. Natl. Acad. Sci. USA</i> (1998), 95: 1410-1415. (Exhibit 22)
		Keller, P. et al., "Crystal Structure of a Bzip/dna Complex at 2.2 Å: Determinants of DNA Specific Recognition", <i>J. Mol. Biol.</i> (1995), 254: 657-667. (Exhibit 23)
		Kenar, K. T. et al., "A calorimetric characterization of the salt dependence of the stability of the GCN4 leucine zipper", <i>Protein Sci.</i> (1995), 4: 1934-1938. (Exhibit 24)
		Konig, P. et al., "The X-ray Structure of the GCN4-Bzip Bound to ATF/CREB Site DNA Shows the Complex Depends on DNA Flexibility", <i>J. Mol. Biol.</i> (1993), 233: 139-154. (Exhibit 25)
		Kono, H. et al., "Designing the hydrophobic core of <i>Thermus flavus</i> malate dehydrogenase based on side-chain packing", <i>Protein Eng.</i> (1998), 11: 47-52. (Exhibit 26)
		Kroll, D. J. et al., "A Multifunctional Prokaryotic Protein Expression System: Overproduction, Affinity Purification, and Selective Detection", <i>DNA Cell Biol</i> (1993), 12: 441-53. (Exhibit 27)
		Krylov, D. et al., "A thermodynamic scale for leucine zipper stability and dimerization specificity: e and g interhelical interactions", <i>EMBO J.</i> (1994), 13: 2849-2861. (Exhibit 28)
		Lee, B. et al., "Stability of protein structures", <i>Curr. Opin. Biotech.</i> (1997), 8: 423-426. (Exhibit 29)
		Lim, K.-T. et al., "Molecular Dynamics for Very Large Systems on Massively Parallel Computers: The MPsim program", <i>J. Comp. Chem.</i> (1997), 18: 501-521. (Exhibit 30)
		Lubienski, M. J. et al., "Three-Dimensional Solution Structure and <sup>13</sup> C Assignments of Barstar Using Nuclear Magnetic Resonance Spectroscopy", <i>Biochemistry</i> (1994), 33: 8866-8877. (Exhibit 31)
		Lumb, K. J. et al., "Measurement of Interhelical Electrostatic Interactions in the GCN4 Leucine Zipper", <i>Science</i> (1995), 268: 436-438. (Exhibit 32)
09		Matthews, B. W. "Studies on Protein Stability with T4 Lysozyme", <i>Adv. Protein Chem.</i> (1995), 46: 249-295. (Exhibit 33)

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00	Mendel, D. et al., "Probing Protein Stability with Unnatural Amino Acids", <i>Science</i> (1992), 256, 1798-1802. (Exhibit 34)
	Mer, G. et al., "Stabilization of proteins by glycosylation examined by NMR analysis of a fucosylated proteinase inhibitor", <i>Nat. Struct. Biol.</i> (1996), 3: 45-53. (Exhibit 35)
	Metallo, S. J. et al., "Distribution of labor among bZIP segments in the control of DNA affinity and specificity", <i>Chem. Biol.</i> (1994), 1: 143-151. (Exhibit 36)
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	Moitra, J. et al., "Leucine is the Most Stabilizing Aliphatic Amino Acid in the d Position of a Dimeric Leucine Zipper Coiled Coil", <i>Biochemistry</i> (1997), 36: 12567-12573. (Exhibit 38)
	Nautiyal, S. et al., "Crystal structure of a designed, thermostable, heterotrimeric coiled coil", <i>Protein Sci.</i> (1999), 8: 84-90. (Exhibit 39)
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	O'Shea, E. K. et al., "Evidence that the Leucine Zipper is a Coiled Coil", <i>Science</i> (1991), 254: 539-544. (Exhibit 41)
	Paoletta, D. N. et al., "DNA Targets for Certain Bzip Proteins Distinguished by an Intrinsic Bend", <i>Science</i> (1994), 264: 1130-1133. (Exhibit 42)
	Petka, W. A. et al., "Reversible Hydrogels from Self-Assembling Artificial Proteins", <i>Science</i> (1998), 281: 389-392. (Exhibit 43)
	Rennert, O. M. et al., "On the Incorporation of 5', 5'-Trifluoroleucine into Proteins of <i>E. coli</i> ", <i>Biochemistry</i> (1963), 2: 471-476. (Exhibit 44)
	Roux, M. et al., "Fragmentation of Phospholipid Bilayers by Myelin Basic Protein", <i>Biochemistry</i> 33: 307 1994. (Exhibit 45)
	Sandberg, W. et al., "Influence of Interior Packing and Hydrophobicity on the Stability of a Protein", <i>Science</i> (1989), 245: 54-57. (Exhibit 46)
	Schneider, J. P. et al., "A Designed Buried Salt Bridge in a Heterodimeric Coiled Coil", <i>J. Am. Chem. Soc.</i> (1997), 119: 5742-5743. (Exhibit 47)
	Sharma, N. et al., "Efficient introduction of aryl bromide functionality into proteins in vivo", <i>FEBS Lett.</i> (2000), 467: 37-40. (Exhibit 48)
	Southern, E. M. "Detection of Specific Sequences among DNA Fragments Separated by Gel Electrophoresis", <i>J Mol Biol.</i> (1975), 98:503-517. (Exhibit 49)
	Tannor, D. J. et al., "Accurate First Principles Calculation of Molecular Charge Distributions and Solvation Energies from Ab initio Quantum Mechanics and Continuum Dielectric Theory", <i>J. Am. Chem. Soc.</i> (1994), 116: 11875-11882. (Exhibit 50)
	Thompson, K. S. et al., "Thermodynamic Characterization of the Structural Stability of the Coiled-Coil Region of the Bzip Transcription Factor GCN4", <i>Biochemistry</i> (1993), 32: 5491-5496. (Exhibit 51)
	van Hest, J. C. M. et al., "Efficient introduction of alkene functionality into proteins in vivo", <i>FEBS Lett.</i> (1998), 428: 68-70. (Exhibit 52)
00	van Hest, J. C. M. et al., "Efficient Incorporation of Unsaturated Methionine Analogs into Proteins in Vivo", <i>J. Am. Chem. Soc.</i> (2000), 122: 1282-1288. (Exhibit 53)

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Zhou, Y. et al., "Building a Thermostable Membrane Protein", *J. Biol. Chem.* (2000), 275: 6975-6979. (Exhibit 58)

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